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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,118	12/04/2000	James Norman Cawse	RD-27,953	6825

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EXAMINER

EPPERSON, JON D

ART UNIT

PAPER NUMBER

1639

DATE MAILED: 07/15/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary*Filed***Application No.**

09/729,118

Applicant(s)

CAWSE, JAMES NORMAN

Examiner

Jon D Epperson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Please note: The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1639.

Status of the Application

1. The Response filed November 29, 2001 (Paper No. 12) is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Status of the Claims

3. Claims 1-7, 10 and 16 are pending. Applicants amended claim 1-7, 10 and 16 in the "March 19, 2003" amendment (see Paper No. 18) (see also attached Interview Summary). No claims were added or deleted. Therefore, claims 1-7, 10 and 16 are pending and examined on the merits in this case.

Withdrawn Objections/Rejections

4. The objection to claims 6 is withdrawn in view of applicant's amendments thereto. With respect to the rejections under the second paragraph of 35 U.S.C. 112, the rejections denoted A-D are withdrawn in view of applicant's amendments to the claims and/or cancellation of claims. All other rejections are maintained and the arguments are addressed below.

Outstanding Objections and/or Rejections

Claim Rejections - 35 USC § 103

5. Claims 1-7, 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eigen et al (US Patent No. 5,447,679) (Date of Patent is **September 5, 1995**) and Bottenbruch et al (US Patent No. 4,086,310) (Date of Patent is **April 25, 1978**) and Bayer (Bayer “Mackrofol BL” Application Technology Information **March 21, 1998**, 1-6).

For *claims 1, 10 and 16*, Eigen et al (see entire document) teaches a polycarbonate substrate with an array of reactions cells that contains a polycarbonate monofilm covering (i.e., each of the wells contains “two opposing walls”, a concave bottom, and “comprises” a polycarbonate monofilm covering) (see Eigen et al, figures 1-5 and 10; see especially elements 2, 11 and 49; see also column 1 paragraphs 1-3).

Please note that the limitation of “a reactor plate for the catalytic production of aromatic carbonates” in claim 1 represents functional language describing a use of the apparatus, which wouldn’t further limit the scope of the claimed invention. See MPEP § 2114:

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959).

“[A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original)

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

The prior art teachings of Eigen et al differ from the claimed invention as follows:

For *claim 1-7*, Eigen et al is deficient in that it does not specifically teach the use of a “permeable film” that can selectively permit transport a reactant gas into the one cell while preventing transport of a reaction product out of the cells. Eigen et al is also deficient in that it does not teach a permeable polycarbonate film that selectively admits transport of oxygen and carbon monoxide and prohibits transport of a diary carbonate. Eigen only teaches the use of a polycarbonate film that covers the wells of the polycarbonate substrate wherein the film is 0.1 mm thick (see Eigen et al, column 8, paragraphs 1, 4 and 6).

Eigen et al is also deficient in that it does not teach a permeable film that is characterized by a diffusion coefficient of 5×10^{-10} to 5×10^{-7} ; or of 1×10^{-9} to 1×10^{-7} ; or of 2×10^{-8} to 2×10^{-6} cc(STP)-mm/cm² – sec cm-Hg. Furthermore, Eigen et al is deficient in that it does not teach a permeable film that is between .0002 to .05 mm; or between .005 to .04 mm; or between .01 to .025 mm thick. Eigen et al only shows polycarbonate films that are 0.1 mm thick.

However, the combined teachings of Bottenbruch et al and Bayer teach the following limitations that are deficient in Eigen et al:

For *claims 1-7 and 10*, Bottenbruch et al (see entire document) teaches the use of polycarbonate monofilms that are commercially available at .002 mm thickness (e.g., Makrofol from Bayer) and also provide several other examples wherein the thickness is less than .002 mm e.g., .1 μ m (see Bottenbruch et al, column 1, lines 47-50; see also Examples 1-3 and claim 3). Furthermore, Bottenbruch et al teaches that these polycarbonate films are permeable especially to oxygen and carbon dioxide and that this

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“permeability is inversely proportional to the thickness of the film” (see Bottenbruch et al, column 1, paragraphs 4-5; see also column 4, paragraph 4) (see also Bayer, page 2, column 2 showing various thickness for the polycarbonate film).

The limitations wherein the film “selectively permit transport of a reactant gas into the one cell while preventing transport of a reaction product out of the cells” and “selectively admits transport of oxygen and carbon monoxide and prohibits transport of a diary carbonate” in claim 1 are also anticipated because these limitations are inherent properties of the “polycarbonate film” disclosed by Bottenbruch et al and Bayer or, in the alternative, would be construed as functional language describing a use of the apparatus, which wouldn’t further limit the scope of the claimed invention. See MPEP § 2114:

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959).

“[A]pparatus claims cover what a device is, not what a device does.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original)

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

However, in the alternative that the functional language in claim 1 (e.g. the selective permeability) is to be considered as additional limitations for claim 1, the claimed invention would still be anticipated by the combined teachings of Bottenbruch et al and Bayer. For example, Bottenbruch et al and Bayer teach the same polycarbonate film with the same thickness as that claimed by applicant. Furthermore, Bottenbruch et al teaches that the permeability depends on the thickness and shows that their polycarbonate membrane is selectively permeable to oxygen and carbon monoxide (see Bottenbruch et al, column 1, lines 47-50; see also Examples 1-3 and claim 3; see also column 1,

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paragraphs 4-5; see also column 4, paragraph 4; see also Bayer, page 2, column 2 showing various thickness for the polycarbonate film). Although Bottenbruch and Bayer never explicitly state that their polycarbonate films would not be permeable to larger hydrocarbons like diaryl carbonate, the permeability is expected to be the same as that disclosed by applicant because the film is made out of the same polycarbonate material and has the same thickness as that claimed by applicants. Furthermore, Bottenbruch et al provides examples of other hydrocarbons i.e., propane and natural gas (see Bottenbruch et al, column 4, lines 40-41) that have significantly lower permeability than oxygen and carbon dioxide which would further indicate that larger hydrocarbons like diaryl carbonate would not be permeable. "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The Office does not have the facilities to make such a comparison and the burden is on the applicants to establish the difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray*, 10 USPQ 2d 1922 1923 (PTO Bd. Pat. App. & Int.).

Furthermore, the limitations of diffusion (see claims 2-4) are also met because Bottenbruch et al teaches that the diffusion coefficient is an inherent property of the polycarbonate material and its thickness (see Bottenbruch et al, column 1, paragraphs 4-5; see also column 4, paragraph 4) and, as a result, the polycarbonate films disclosed by Bottenbruch et al and Bayer must have the same diffusion coefficients because they are made of the same material and have the same thickness. "When the PTO shows a sound

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basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The Office does not have the facilities to make such a comparison and the burden is on the applicants to establish the difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray*, 10 USPQ 2d 1922 1923 (PTO Bd. Pat. App. & Int.).

It would have been obvious to one skilled in the art at the time the invention was made to make a polycarbonate microtiter plate with a polycarbonate film covering as taught by Eigen et al with the thinner gas permeable polycarbonate film as taught by Bottenbruch et al and Bayer because Bottenbruch et al teaches that these thinner polycarbonate films were commercially available at the time of the Eigen et al invention and that the invention of Eigen et al specifically requires the use of polycarbonate films, which would direct a person of skill in the art toward commercial sources of the film. Furthermore, one of ordinary skill in the art would have been motivated to use the apparatus as taught by Eigen et al with the thinner polycarbonate films as taught by Bottenbruch et al and Bayer et al because of cost savings and convenience (i.e., commercial availability) and also because of the favorable properties of the thinner films (e.g., gas permeability, ease of manufacture, high heat distortion point, electrical insulating capacity, favorable dielectric constant) (see Bottenbruch et al, column 1, see also Bayer entire document). Furthermore, one of ordinary skill in the art would have reasonably expected to be successful because Bottenbruch et al teaches several successful examples of making thin gas permeable polycarbonate films and Bayer shows their

commercial success and Eigen et al teaches that polycarbonate films can be used to cover their disclosed polycarbonate microtiter plates (see Bottenbruch et al, Examples 1 and 2; see also Eigen et al, entire document, see Bayer, entire document).

Response

6. Applicant's arguments directed to the above 35 U.S.C. § 103(a) rejection were considered (and are incorporated in their entirety herein by reference) but were not deemed persuasive for the following reasons. Please note that the above rejection has been modified from its original version to more clearly address applicants' newly amended and/or added claims and/or arguments.

Applicant argues [1] that there is no motivation to combine, [2] the references of Bottenbruch et al and Bayer do not teach "two opposing walls comprising permeable polycarbonate film", [3] the issue of "two opposing walls" was addressed by the February 3, 2002 Office Action allowance of claim 15 and Applicant's subsequent September 23, 2002 amendment incorporating the claim 15 limitation into claim 1 followed by the PTO's withdrawal for the February 3, 2002 Office Action art rejection, [4] the reference does not provide the locations specifically relied upon except to say "see entire document", [5] the Office Action states nothing about teachings of "two opposing walls comprising permeable polycarbonate film" (see paper No. 18, pages 6-7).

This is not found persuasive for the following reasons:

The Examiner contends [1] that there is motivation to combine the references as stated in the original art rejection (see above, "Furthermore, one of ordinary skill in the art would have

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been motivated to use the apparatus as taught by Eigen et al with the thinner polycarbonate films as taught by Bottenbruch et al and Bayer et al [i.e., to combine the references] because of cost savings and convenience (i.e., commercial availability) and also because of the favorable properties of the thinner films”).

Furthermore, the Examiner contends [2] in response to applicant's arguments against the references individually (i.e., that Bottenbruch et al and Bayer do not teach “two opposing walls comprising permeable polycarbonate film”; Please note: this rejection is a combination of “3” references including Bottenbruch et al, Bayer et al and Eigen et al which do in combination teach all of Applicant’s limitation), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In addition, the Examiner contends [3] that each Action on the merits requires an update search and reconsideration of the issues presented. Upon further search and consideration the “two opposing walls” was deemed to be still at issue by the Examiner and any expressed or implied “allowance” of the “two opposing walls” limitation is hereby withdrawn.

The Examiner also contends [4] that each of the references used in the 35 U.S.C. § 103(a) rejection were properly cited (see rejection above disclosing specific pages, paragraphs and line number for each of the limitations). Furthermore the “see entire document” statement, which is at issue here, was only stated “once” at the onset of the rejection and the Examiner knows of no per se rule against using the words “see entire document” in the MPEP. Furthermore, the

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Examiner contends that Applicants should read the “entire document” to put the issues in their proper context.

Finally, the Examiner contends [5] that the combined teachings of Bottenbruch et al, Bayer and Eigen et al do teach “two opposing walls comprising permeable polycarbonate film” (see especially, paragraph 1 of the original rejection, “Eigen et al (see entire document) teaches a polycarbonate substrate with an array of reactions cells that contains a polycarbonate monofilm covering (i.e., each of the wells contains “two opposing walls”, a concave bottom, and “comprises” a polycarbonate monofilm covering) (see Eigen et al, figures 1-5 and 10; see especially elements 2, 11 and 49; see also column 1 paragraphs 1-3); see also paragraph 5 of the original rejection, “Furthermore, Bottenbruch et al teaches that these polycarbonate films are permeable especially to oxygen and carbon dioxide and that this “permeability is inversely proportional to the thickness of the film”).

Accordingly, the 35 U.S.C. § 103(a) rejection cited above is hereby maintained.

New Rejections

Claims Rejections - 35 U.S.C. 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-7, 10 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably

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convey to one skilled in the relevant art that the inventor(s), at the time the application was filed had possession of the claimed invention. This is a new matter rejection.

A. In newly amended claims 1-7, 10 and 16 (see Paper No. 18), to the extent that the term “plate” extends beyond the definition of a “reactor plate” (e.g., the term “plate” is broader than scope than the term “reactor plate” because the term “reactor” limits the type of plates), the increased breadth of possible modification constitutes new matter, since there is no specification support or original claim support for such scope; nor has applicant provided any indication where such support exists.

B. In newly amended claim 1 (see Paper No. 18), to the extent that the phrase “ a substrate comprising an array of reaction cells” extends beyond the scope of the phrase “a substrate with an array of reaction cells”, the increased breadth of possible modification constituted new matter, since there is no specification support or original claim support for such scope; nor has applicant provided any indication where such support exists.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon D Epperson whose telephone number is (703) 308-2423. The examiner can normally be reached Monday-Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Andrew Wang can be reached on (703) 306-3217. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2439.

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Jon D. Epperson, Ph.D.

July 12, 2003

A handwritten signature in black ink, appearing to read 'Andrew Wang', is written over a rectangular stamp.

ANDREW WANG
SUPERVISORY PATENT EXAMINER
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